UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

INSECT CONTROL - COEUR D'ALENES

REPORT ON INSECT CONTROL

SPRING

1932

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Insect Control
Coeur d'Alene
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The survey and field examination which was carried out during the summer of 1931, under the direction of Mr. James C. Evenden, Chief of the Bureau of Entomology, indicated the need for continuation of the fight which has been waged against Dendroctonus Monticolae (Mountain Pine Beetle) for the past several years. In his report, summary of which appears on Page 31 of that document, Mr. Evenden recommended treatment of 8721 trees, located on an area embracing 51,350 acres, which was estimated to cost $53634.00. In the final analysis of the question of funds $40,000.00 were allotted by the Washington Office and this amount was increased by transfer of additional funds to $41,525.00.

In conference with Messrs. Koch, Simpson, and Evenden, it was agreed that sufficient funds were not available to complete the entire project as originally outlined by Mr. Evenden, and it was, therefore, agreed to eliminate the Breakwater, Stewart, and Potter Creek areas. This reduced the total area on which treatment was recommended to 42,350 acres and the total number of trees to 7477. Plans were immediately formulated to secure the best possible results in treating with the idea in mind of securing a 100 percent cleanup. The first camp was established on April 30 on East Eagle Creek. Additional camps were added as fast as weather conditions would permit until 15 camps, employing 368 men,

were in operation. Weather conditions until early in June were most unfavorable and the ratio of men to number of pack stock used was 3 to 1 for a considerable period. As further proof of the difficulties encountered because of incessant rains, Steamboat Creek which is normally fordable in the spring reached such height that it could not be crossed with pack stock, which necessitated the movement of supplies by man power to the camps located on the Taylor and Can Creek Units.

The writer was in charge of the project with three District Rangers actually handling the work in their respective districts, all of whom were responsible, through the project manager, to the Supervisor, for the results obtained. The members of the permanent personnel assigned to this project aside from the project manager were: Charles B. Hand, district ranger in charge of the Shoshone District; A. J. Kramis, district ranger in charge of the Grizzly District; and George S. Haynes, district ranger in charge of the Little River District; Phil A. Clack, ranger in charge of the supply base at Prichard in the Shoshone District; Henry A. Ogston, lumberman, camp manager in the Grizzly District; W. W. Larsen, ranger, unit manager under the supervision of Ranger Hand in the Shoshone District; and F. H. Gravlin, camp manager, also in the Shoshone District. In addition there were five ex-rangers employed whose tenure in office had ranged from six to sixteen years

The actual work of spotting and treating was carried out in the same manner as in 1931, i.e., five-man spotting crews were used and treatment was accomplished by felling and peeling. Mr. Terrel, scientific aid from the Bureau of Entomology, was on the job throughout the entire time and gave valuable assistance in carrying on the work, more particularly in perfecting the method of spotting.

In planning the organization a great deal of thought was given to ways and means of reducing costs to the lowest possible figure consistent with a good cleanup. Accordingly, in conference with Messrs. Koch and Simpson it was decided to combine spotting and treating as an experiment on the Bumblebee Unit in the Grizzly District and clean up this particular job with one bite of the cherry. To do this it was necessary that one pack horse be used to transport the tools and equipment used by each individual crew, of which there were four. Mr. Evenden's set-up for this unit included an estimated acreage of 3,040, and 3,052 acres were actually worked. From the standpoint of topography and accessibility, Bumblebee lent itself more easily to the use of horses in the treatment than any other unit included in the total acreage recommended for spring control; in fact, it was about the only unit on which horses could be used at all. While the Bumblebee Unit has rugged and broken topography it is comparatively free from rock cuttings. Furthermore the underbrush is not so dense here as is the case elsewhere. In connection with the treating, horses were used to the extent of 96 horse days at a cost of $96.00, or approximately $.18 per tree for this job.

By referring to the summary of man-day production which appears on page 6 of this report, it will be noted that the output per man day is practically the same as the man-day output on other units where the number of infested trees per acre is comparable. The Bumblebee Unit showed an infestation of one tree to every 5.83 acres, while the Can Creek Unit, which is also located in the Grizzly District, showed an infestation of one tree to every 5.96 acres. The summary of man-day output shows but little difference for these two units, which is an indication that the use of the horse in connection with treating has but little, if any, advantage over the regular method employed. However, it does lighten the load of the treating crews and, it is believed, should be used when topographic conditions will permit.

The Flat Creek Unit, which is located in the Shoshone District, has the lowest man-day output of any unit in this District. However, this is no discredit to the Forest officer who handled the work of treating here. Infested timber encountered averaged one tree to about every seven acres. Furthermore, the size was an influencing factor as regards treating, averaging seven logs per tree and approximately eight logs per M, with an occasional three-foot diameter tree thrown in as a sweetener.

Cougar Creek Unit was undoubtedly the most difficult of all to handle because of its very rugged topography, although Eagle Creek Unit comes in as a very close second. In either case these units must be seen in order for one to really appreciate the difficulties encountered in slipping up on the

pesky beetle. Close perusal of the summary of man-day output on page 6 will show by comparison that the output per man day on these two units did not vary a great deal. The infestation, it will be noted, was practically the same on both areas. Camp Manager Faulkner spotted an average of 2.18 trees per day as against 2.58 trees per day for Camp Manager Lightner. This may be explained by the fact that the infested trees on the Eagle Creek Unit were found more often in small groups, while on the Cougar Creek Unit very few groups containing more than two or three trees were found. This holds true of practically all units on the entire job. Wherever there is any wide difference in the man-day output there is some influencing factor,- topographic or otherwise.

In organizing the spotting crews only the best men available were employed. Eagle Creek Camp was established on April 30 and Hawksite and Sissons went in a few days later. These three camps were supplied with a full crew of experienced and trained men. As fast as other camps were placed in the field it became necessary to draw on these camps first established for key men, particularly spotters, which necessitated a replacement by men of less experience and training. As the job expanded this same procedure was carried out until all camps were manned, i.e., key men were sent from the older established camps to a new setting, thereby forming a nucleus for a crew. The object uppermost in the mind of each man assigned to this project was to secure the best possible results in spotting, fully appreciating, by reason of past experience, that mere man is not infallible.

The labor situation is not at this time, nor has it ever been, in the memory of the writer, in such chaos as it was at the beginning of this job. This made necessary a classification of men, which in some instances excluded a few trained and experienced spotters. Approximately twelve men who had spotted with Webb in the Big Hole in 1929 and again on the Coeur d'Alene in 1930, were disqualified by reason of not having worked for the Government in 1931 and because they were wholly without dependents.

However, with the exception of the Sisson and Yellow Dog areas, fairly competent spotters were obtained. On these areas considerable respotting had to be done because of lack of experience on the part of the spotters employed on these two units.

In connection with carrying out the spotting a crew of the best and most experienced men (5) available was organized for the purpose of check-spotting, the idea being to determine, if possible, the percentage of infested trees being missed by the spotting crews and also to eliminate, in-so-far as possible, any weakness which might be found to exist in this branch of the work. Mr. Terrel of the Bureau of Entomology personally directed the work of this crew. A check was made on three different areas in the Shoshone District, namely, Sissons, Yellow Dog and Downey Creeks. The area covered in check-spotting amounted to 13 per cent, 14 per cent and 5 per cent of the total area of each respective unit, and indicated that 81 per cent of the total number of infested trees on these areas was being spotted for treatment.

It may be said, however, that in a great many instances trees which were attacked and found to have been missed by the regular spotting crews were only slightly infested and it required the trained eye as well as the judgment of an expert in determining whether or not they should be spotted for treating. Incidentally the check-spotting was carried out on areas where our weakest spotting crews were employed. The infestation on the Sisson Unit showed one tree to each 3.88 acres. On the basis of the number of trees missed on this area the average would be approximately one tree to each 20 acres. The Yellow Dog area had an infestation of one tree to each 2.74 acres, and Downey Creek one tree to each 3.23 acres. The number of trees missed, according to the check made, amounted to approximately one tree to each 14 acres for the Yellow Dog Unit and one tree to each 16 acres for the Downey Creek Unit.

Special attention was given to reducing kitchen costs over previous years and still provide sufficient wholesome food for all tables, and in this we were very successful. In accomplishing this reduction a mimeographed current cost keeping sheet was prepared in the Supervisor's office, on which was listed the names of all subsistence supplies and the unit price of each commodity. The camps were supplied with these forms and each cook was required to keep a daily record of the supplies used and their cost. At the end of each ten-day period a check was made on every camp in operation to ascertain the cost per meal. Cooks

were informed at the outset that excessive costs would not be tolerated. This cost keeping system seemed to create quite a little rivalry between the cooks employed and each man left nothing undone which would tend to give the other fellow the edge on him with reference to kitchen costs. The district rangers rode a tight herd on all camps and the writer also made frequent inspections to see that rigid economy was being observed.

Substantial reductions were also made possible by cutting out certain expensive items and also placing a restriction on the use of fresh meat. This latter item was limited to 2/5 pounds per man per day whereas the average consumption had been 1-1/10 pounds per man day. A further reduction was made by requiring all cooks to bake bread. Heretofore bread in the loaf has been furnished at a cost of approximately five cents per man per day. A saving of 3-1/2 cents per man per day was made by reason of the cooks supplying bread. Several items, the cost of which was so high as to classify them as luxuries, were stricken from the list. Dried onions,for example, cost 12 cents per pound. Obviously no camp may be expected to get on entirely without this commodity. However, the cooks saw to it that they were used sparingly. As a matter of comparison the cost per meal for 1930-31-32 is shown below:

1930 - Cost per meal, including preparation - - -	$.4750
1931 - " " " " " - - -	.3923
1932 - " " " " " - - -	.2287

Unit	Est. Acres	Acres Covered	Est. Trees	Trees Treated
Eagle Creek	3000	3261	600	713
Hawksite	8000	6715	1112	685 °
Sissons	4700	4261	855	1097
Yellow Dog Cr.	3040	2692	949	1005
Brett-Miner Cr.	840	1050	152	309
Downey Creek	3120	2401	558	743
Flat Cr. Burn Flat Creek	800	982	187	189
Eighty Day Cr.	640	540	250	80
Bumblebee Cr.	3040	3052	504	525
Cougar Creek	2450	2838	367	679
Can Creek	1760	1807	279	303
Taylor's Camp	2720	2205	342	534
Lieberg Cr.	3920	5000	811	654
Tom Lavin Cr.	3320	2762	298	317
Forks	1000	1100	233	75
	42350	40666	7477	7906

°1285 acres thrown out on account of being Douglas fir type.

In conference with Messrs. Evenden and Terrel prior to the beginning of the field season, they stated that the areas on which treatment had been recommended had been determined from data obtained by an extensive survey and the individual units would probably vary, in actual acreage, to some extent. It will be noted in the summary on the preceding page that Hawksite, estimated at 8,000 acres, fell short by 1,285 acres. This was due to the Douglas fir type encountered here. Sissons, Yellow Dog Creek, Downey Creek, Taylor's Camp and Tom Lavin Creek all fell short of the estimated acreage for each respective area.

However, each individual unit, where the infestation occurred, was covered 100 per cent in treating. On areas where the acreage covered was greater than the estimated acreage the work of treating was carried on until the entire infested area had been covered. It was not possible, therefore, to hold absolutely to the designated acreage for each individual unit. Where it was considered necessary to reduce the acreage in any unit on which treatment had been recommended, final decision in the matter was made by Mr. Terrel of the Bureau of Entomology and the writer.

SUMMARY BY DISTRICTS OF MAN DAY OUTPUT

Shoshone District Hand in Charge

Unit	Acres	Spotted	Man Days	Trees per day	Treated	Man Days	Trees per day	Acres per Tree	Camp Mgr.
Eagle Creek	3261	695	269	2.58	713	312	2.28	4.57	Lightner
Hawksite	6715	674	409	1.65	685	275	2.49	9.80	Robertson
Sissons	4261	1087	399	2.72	1097	355	3.27	3.88	Newcomb
Yellow Dog	2692	980	253	3.87	1005	279	3.60	**2.67**	Parmentier °
Brett-Miner Cr.	1050	304	107	2.84	309	141	**2.90**	5.59	Dahlstrom
Downey Cr.	2401	802	281	2.85	743	179	4.15	3.23	Crawford °°
Flat Cr.Burn Flat Cr.	982	154	87	1.77	189	146	1.29	**6.72**	Gravlin
Totals	21362	4696	1805	2.60	4741	1667	2.84	4.50	

Grizzly District Kramis in Charge

Eighty Day Creek	540	80	24	3.33	80	37	2.16	6.75	Rossman
Bumblebee Creek	3052	525	240	2.18	523	240	2.18	5.83	Marks
Cougar Creek	2838	679	215	3.16	679	319	2.13	4.18	Faulkner
Can Creek	1807	303	134	2.26	305	137	2.21	5.96	Rossman
Taylor's Camp	2205	534	169	3.16	534	154	3.47	4.13	Ogston
Totals	10442	2119	782	2.71	2119	887	2.39	4.92	

Little River District Haynes in Charge

Lieberg Cr.	5000	654	346	1.89	654	277	2.36	7.64	Hulse
Tom Lavin Cr.	2762	317	224	1.41	317	156	2.03	8.71	Goetz
Forks	1100	75	87	.86	75	36	2.08	14.66	Arthurs
Totals	8862	1046	657	1.59	1046	469	2.23	8.47	

° Includes Yellow Dog Creek, Yellow Dog North Side, and Yellow Dog River.

°° See report on respotting this area. 59 tags pulled.

TOTAL ALL DISTRICTS

Districts	Acres	Spotted	Man Days	Trees per day	Treated	Man Days	Trees per Day	Acres per Tree
Shoshone	21362	4696	1805	2.60	4741	1667	2.84	4.50
Grizzly	10442	2119	782	2.71	2119	887	2.39	4.92
Little River	8862	1046	657	1.59	1046	469	2.23	8.47
Grand Total	40666	7861	3244	2.42	7906	3023	2.61	5.14

COST REPORT

INSECT CONTROL PROJECT

Coeur d'Alene National Forest

Project Coeur d'Alene

Period of Work April 30 to June 28, 1932

Acres Spotted 40666 Acres Treated 40666

Number Trees Spotted 7861 Number Trees Treated 7906

1. Total Expenditures by Appropriations

a.	Insect Control Appropriation	$41525.33	
b.	Other Funds (contributed)	3035.00	
c.	Total		$ 44560.33

2. Classified Expenditures

a.	Salaries (none)		
b.	Wages, temporary labor	$23707.90	
c.	Travel and transportation	5647.26	
d.	Subsistence supplies	5930.10	
e.	Other supplies and equipment	3597.48	
f.	Contributed time	3035.00	
g.	Total	$41917.74	
	Transferred	2500.00	
	Total		$ 44417.74
	Balance		$ 142.59

3. Activity Costs

			Total	Per Tree
a.	Supervision	°	$4431.29	$ .5604
b.	Travel		514.00	.0650
c.	Transportation		5290.76	.6692
d.	Equipment	°°	2094.48	.2649
e.	Camps	#	3438.09	.4348
f.	Spotting		12647.77	1.5997
g.	Treating		11998.24	1.5176
h.	Total		$40414.63	$ 5.1116

i. Subsistence & cookhouse labor (prorated) 7875.07

j. Subsistence only $5930.10 Meals served 34371. Cost per meal $.1725

k. Cookhouse labor 1944.97 " " " " " " .0562

l. Total $7875.07 " " " " " " $.2287

° Includes $2118.88 contributed time.

°° Equipment cost and rentals includes $1343.03 paid out for equipment which has a depreciation of 100%. Additional equipment, amounting to $2254.35 and having a life of 3 years was also purchased and only 33-1/3 percent of the purchase price has been shown under activity costs.

Includes $318.54 contributed time. Also $787.50 as their pro rata of subsistence costs.

4. Output

Spotting.	Number of trees per effective man day	2.42
	Number acres " " " "	12.53
Treating.	Number of trees per effective man day	2.61
	Number acres " " " "	13.45

Total amount of line run in spotting 406592 chains
Amount of line run per effective man day 125 "

Note: Since five man crews were used in spotting, the above figure represents only 4/5 of the actual amount of line run per day by each man engaged in this work. Figuring the compassman out brings the total up to 156.25 chains per man day.

Activity costs include the following.

Subsistence. Food supplies and cookhouse labor (no transportation) Have been prorated against labor on the basis of number of days on each activity. Non-effective time of men paid by the month which includes Sundays, Saturday half holidays, rainy days, etc., not carried as separate item but total monthly rate has been charged against the activities on which the employee was engaged. Activity costs include all contributed time.

a. Supervision. General overhead, warehouse man, camp manager when not engaged in spotting or treating, and all clerical help given by members of the Coeur d'Alene Office.
b. Travel. Travel and expenses paid to and from the job, and salaries of men on travel status.

c. Transportation. All expenses of pack string, including forage. Shoeing, wages of packer, all truck hire including drivers. Also includes freight and express.

d. Equipment includes rental charges by Central Purchase for equipment not purchased outright. Also the total cost of equipment having an annual depreciation of 100 per cent and 1/3 of the cost of all equipment having an annual depreciation of 33-1/3 per cent.

° e. Camps. Includes cost of setting up and breaking camps. Also bull cook and wood cost. No transportation.

f. Spotting. Cost of spotting, including chief spotter.

g. Treating. Cost of treating, including crew foreman, and cost of horses used in packing tools used in connection with this particular branch of work.

° It may be of interest to note that the direct camp costs amounted to $2332.05. 368 men were employed making a camp cost per man of $6.33. After prorating contributed time and mess costs which brings the total camp costs up to $3438.09 the cost per man amounts to $9.34.

The following summary indicates what has been accomplished since 1928 up to and including June 30, 1932.

Acres Surveyed	Est. Trees	Rec. for Treatment	No. Trees Treated	Total Cost From Allotted Funds	Timber Affected M
346590	50931	44165	38937	$220,111.00	19468

Conclusions

The recurring infestation on the Coeur d'Alene has been discouraging, not only from the standpoint of attempted control but also from the standpoint of the large amount of white pine actually destroyed in the process of treating. Serious thought and a great deal of study has been given to methods of control by the personnel of both the Coeur d'Alene and the Bureau of Entomology. The method of spotting has been developed to such an extent that all infested areas on which the Bureau of Entomology recommended treatment have been covered 100 per cent, i.e., every tree has been examined to determine whether an infestation existed.

During the spring of 1931-32, it was a noticeable fact that there was a large emergence of over-wintering broods, starting early in May of each year. Obviously, our spring method of control does not eliminate these over-wintering broods after they have emerged. It has also been found that they start their attack very shortly after emerging. This complicates treating to such an extent that the success of the project has been lessened by reason of the fact that newly attacked trees cannot be spotted with any

degree of certainty at this time of the year. This early attack, it is believed, is responsible to a certain extent for our inability to completely stamp out the infestation.

However, Mr. Evenden's report of conditions as determined by the survey made by the Bureau of Entomology during the field season of this year, is more encouraging than any report since intensive control was undertaken. Several areas covered by this survey show a substantial reduction over previous years in number of trees infested, and recommendations for control in 1933 will, I believe, exclude several areas which have been worked heretofore. It is my belief that fall control, wherever possible, is the most effective and should be carried out, in spite of the fact that the cost is slightly higher than costs which prevail in the spring clean-up.

During September and October of this year an amount of $13,000.00 was spent in the Shoshone District. Report on the fall project, together with map showing the entire area covered during 1932, will be compiled and sent to the Regional Office at an early date.

Howard Drake
Logging Engineer

November 28, 1932.